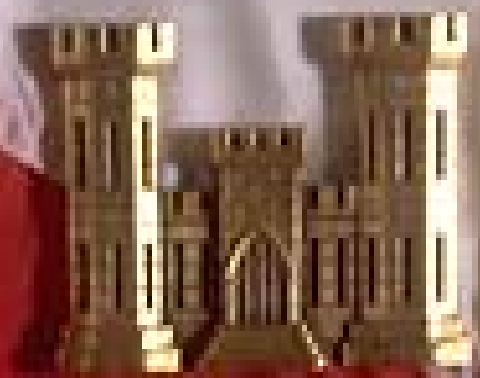
WATERSHED SYSTEM CONFERENCE

Portland, OR

May 13-15, 2003



Water Resources Branch

Watershed Team

Engineering & Construction Div.

HQ, U.S. Army Corps of Engineers

US Army Corps of Engineers

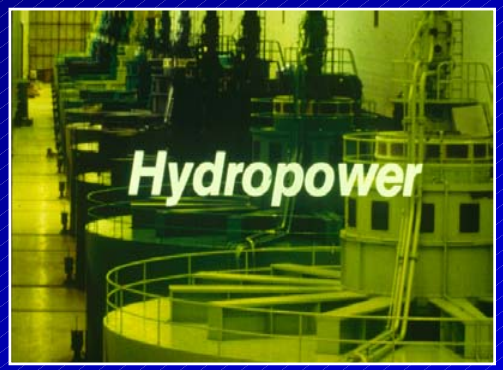
What Do We Do?

Water Resources Infrastructure

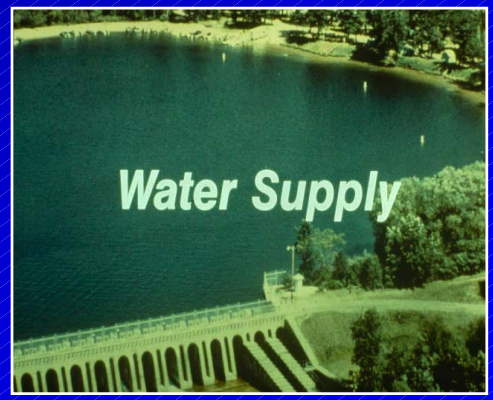
12000 miles of inland waterway
926 harbors
2.4 M tons of commerce/year
270 M cubic yards dredged/yr

383 reservoirs
8500 miles of levee
Prevent $6 in damage for every $1 invested

97 projects protect
284 miles of shoreline
Use of dredged material from navigation projects



75 projects, 20720 MW capacity
3% of total US electric energy
$700M in power sales to Treasury



153 projects supply cities
Including Wash. DC area

4,330 sites at 456 projects
375 M visits/year
$15 B to local economies

Water Resources Branch Watershed Team

- Water Resources Structures (Lock & Dams, Multipurpose Dams, Levees, Channels & Harbors)
- Hydrology & Hydraulics Engineering during Planning, Design and Construction
- Post-Project Water Management, Reservoir Regulation, Water Quality & Environmental Restoration
- International Treaty, International Joint Commission Support, International Boundary and Water Commission
- Research & Development, Technical Policy and Guidance
- Coastal Engineering, Hydropower & Water Supply.

Navigation

- Engineer and Design of new navigation lock and dam projects
- Engineer major rehabilitation or replacement of existing projects
- Provide engineering during planning, construction, and operation phases

Hydroelectric Power

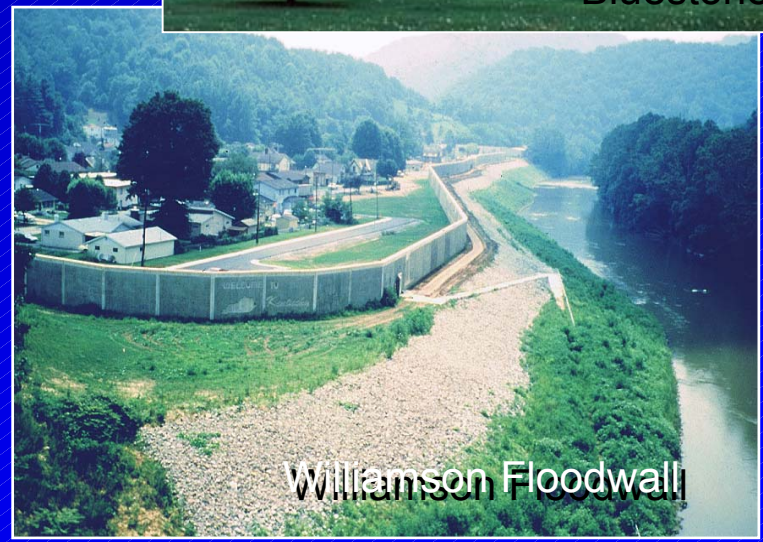
- Plan, Engineer and Design Major Rehabilitation of Existing Powerhouses
- Support operation and maintenance activities
- Support construction activities
- Coordination with Federal Energy Regulatory Commission (FERC)
- Assure integrity and safety of Corps projects

Flood Control

- Dams and reservoirs
- Nonstructural measures
- Floodwalls and levees
- $Billions damages prevented

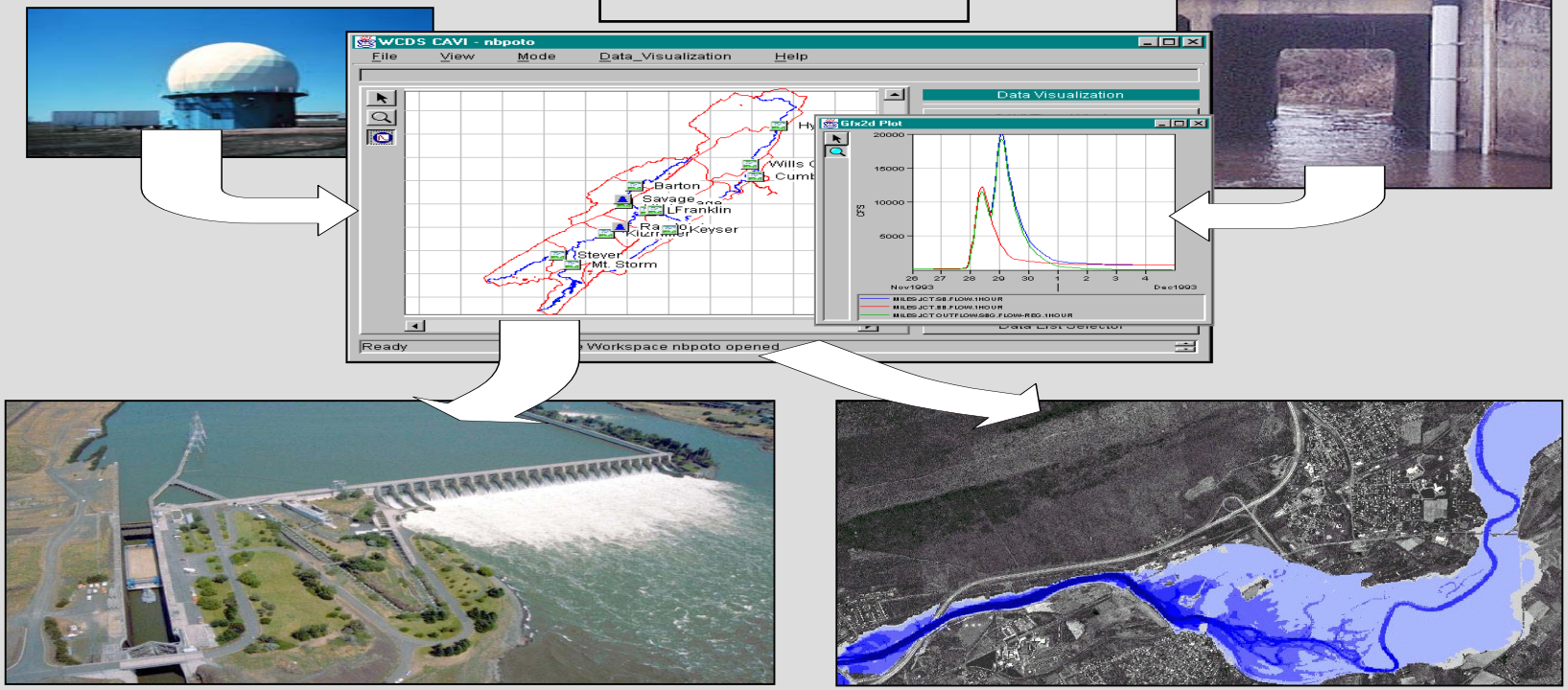

Bluestone Dam


Raising-in-place


Williamson Floodwall

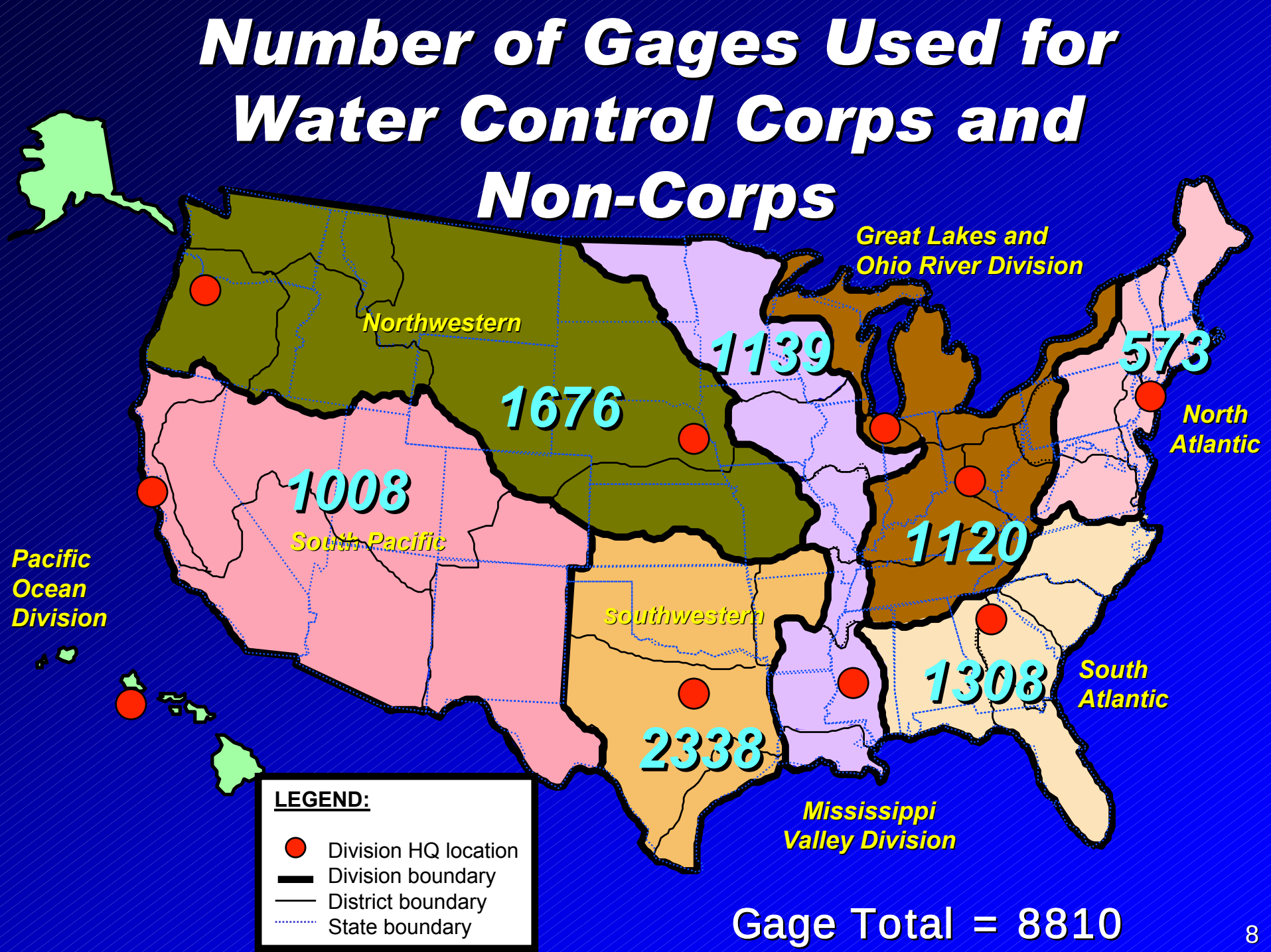
Corps Water Management System

CWMS



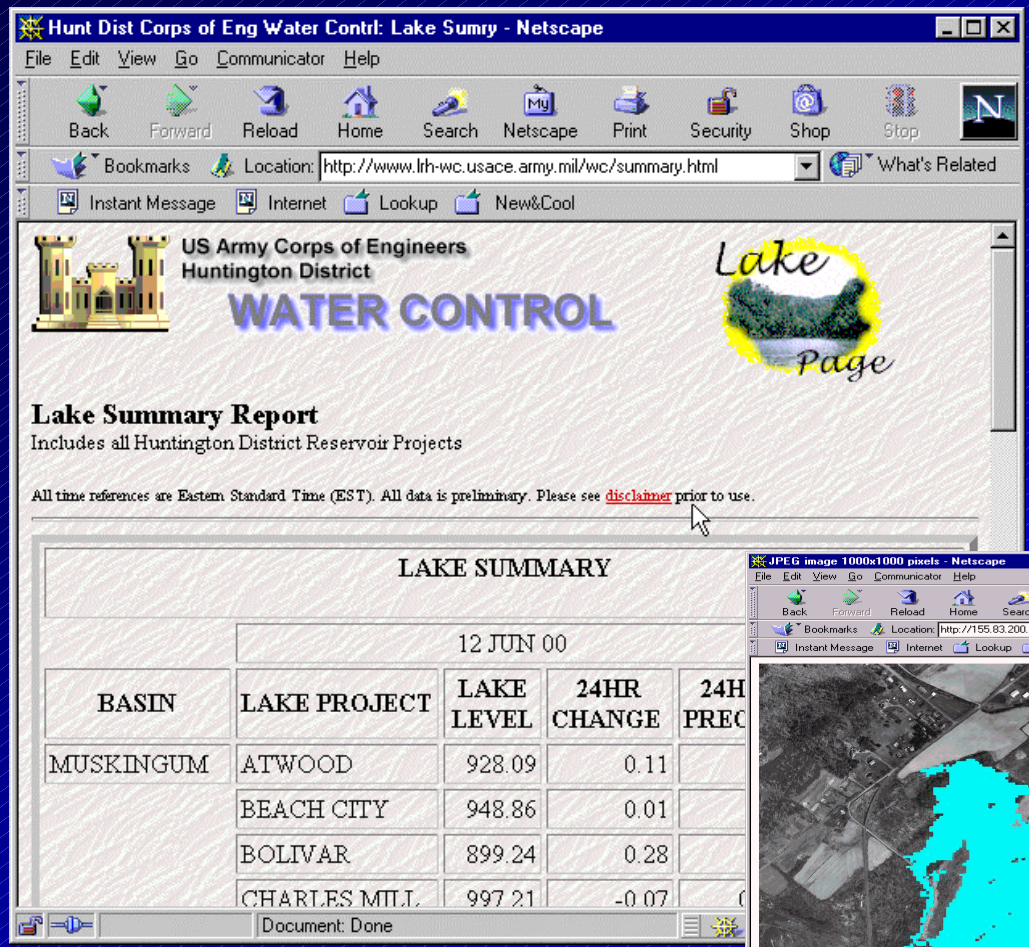
- Real-Time Decision Support for Water Management
- 700+ Multi-Purpose Reservoirs and Flow Control Structures, Thousands of Miles of Levees
- Flow Forecasting, Reservoir Simulation, River Stage & Inundation Determination, Impact/Damage Analysis
- Web-Based Information Dissemination
- Standardized Corps Corporate AIS

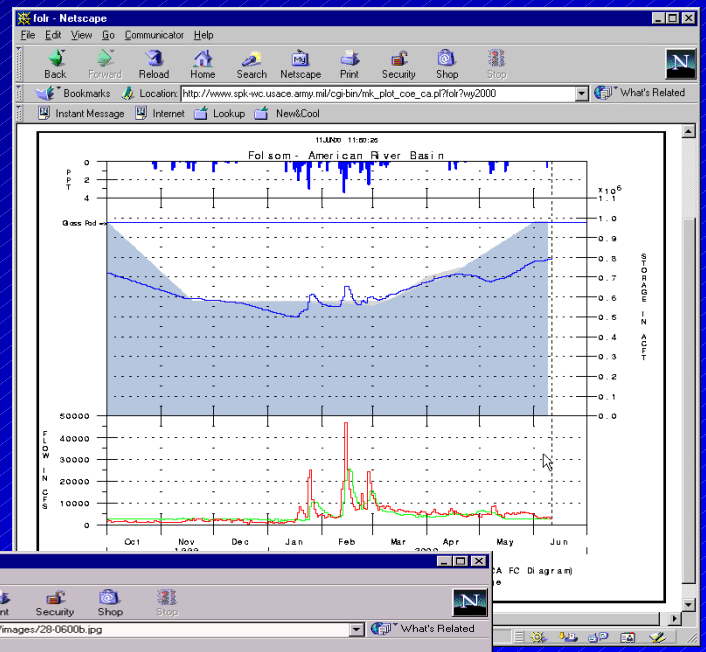
Number of Gages Used for Water Control Corps and Non-Corps

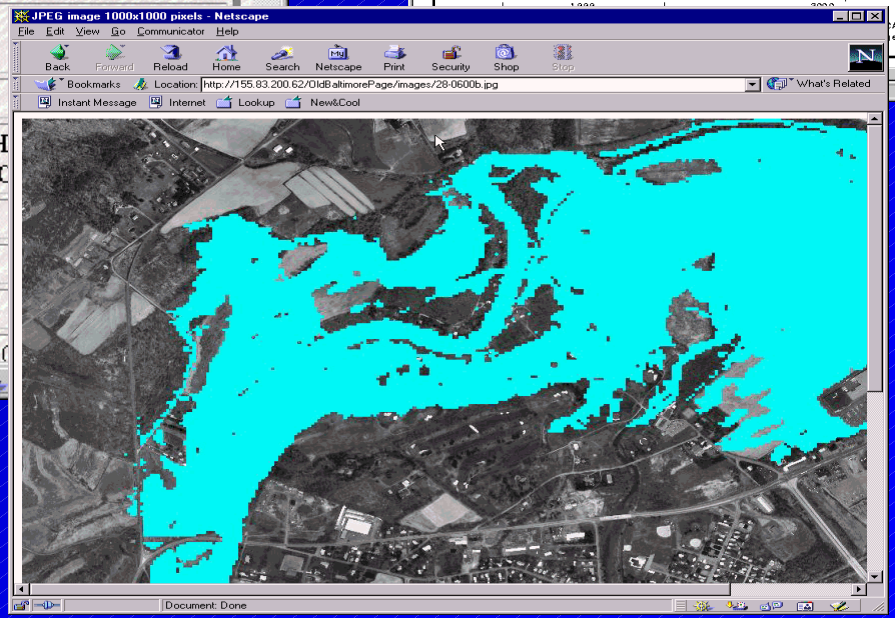


Gage Total = 8810

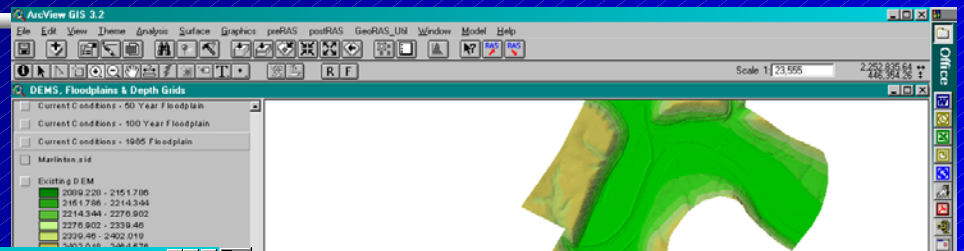
Data Dissemination

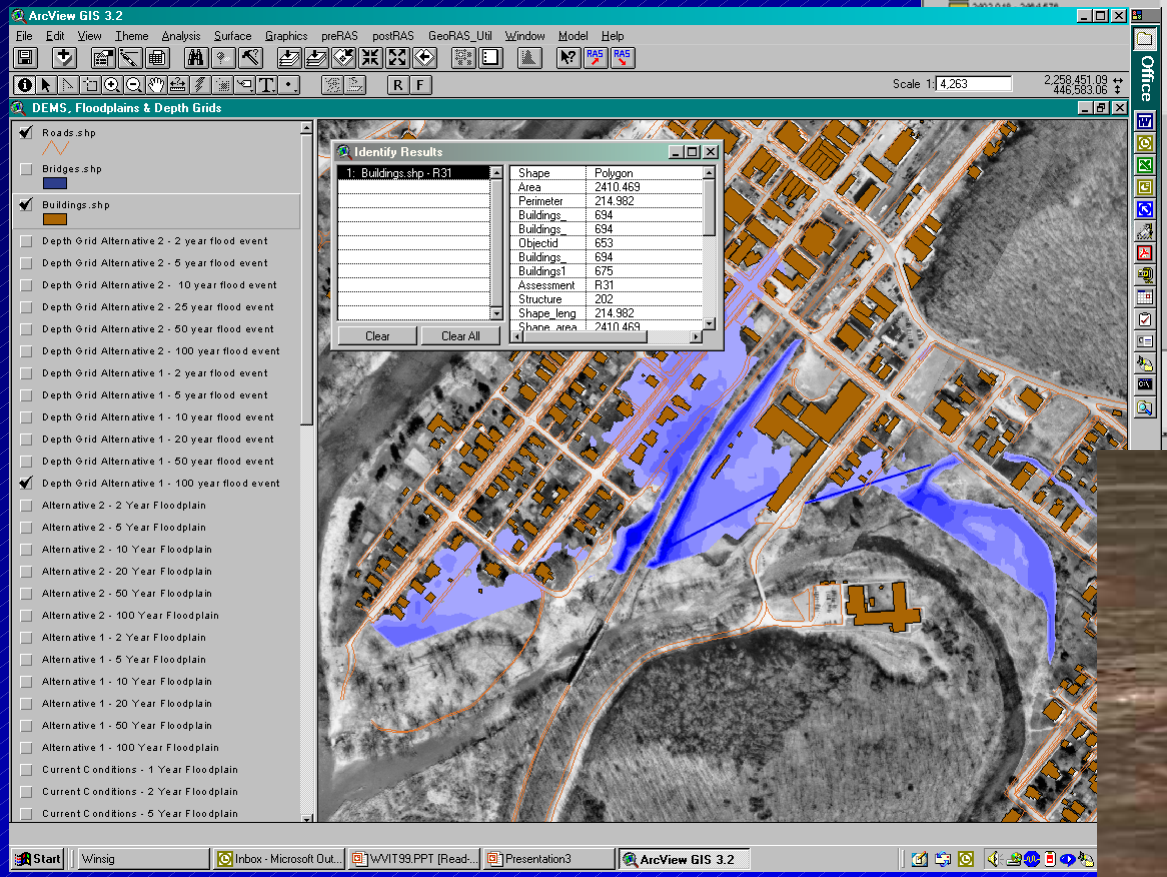




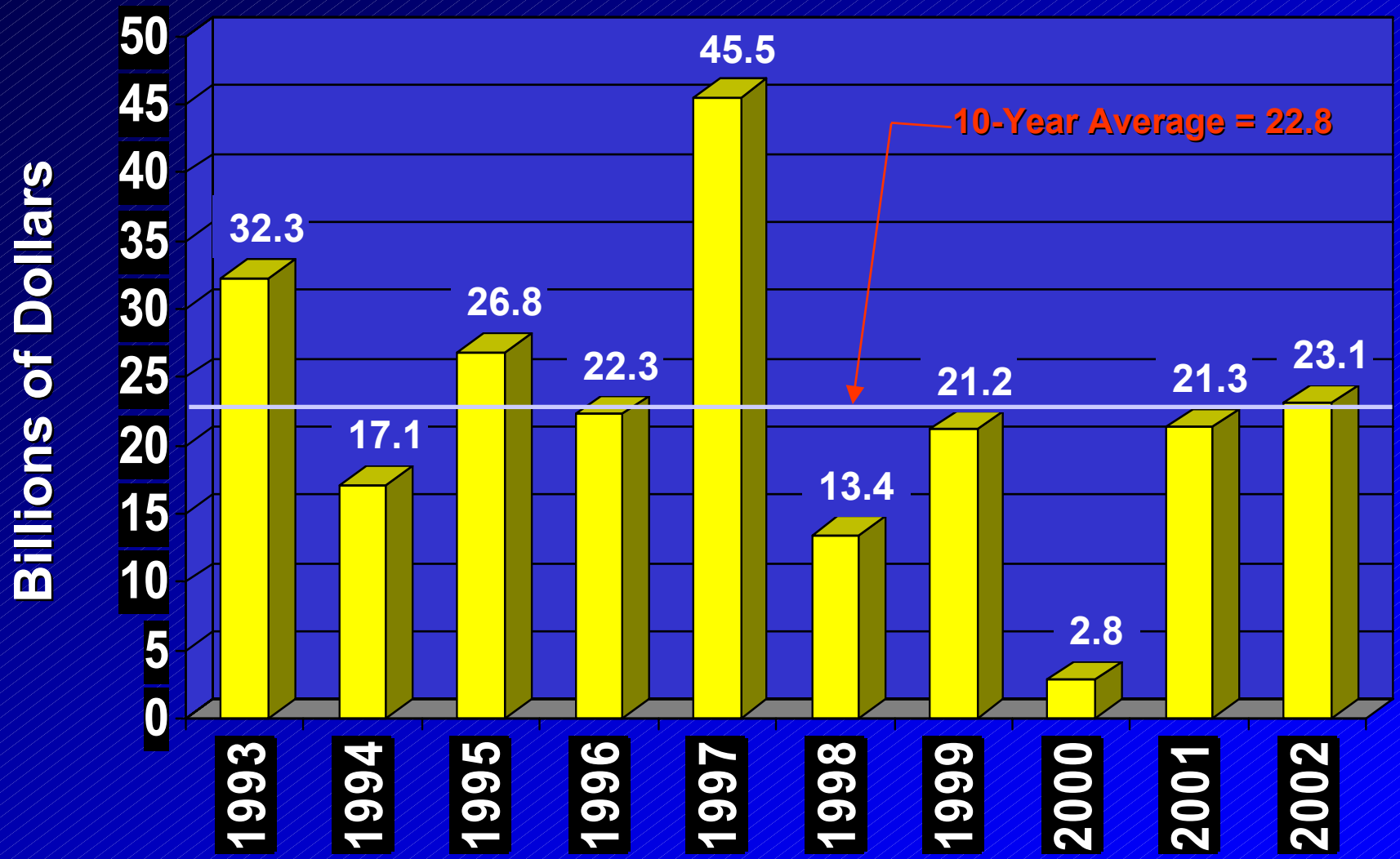


Flood Damage Assessments



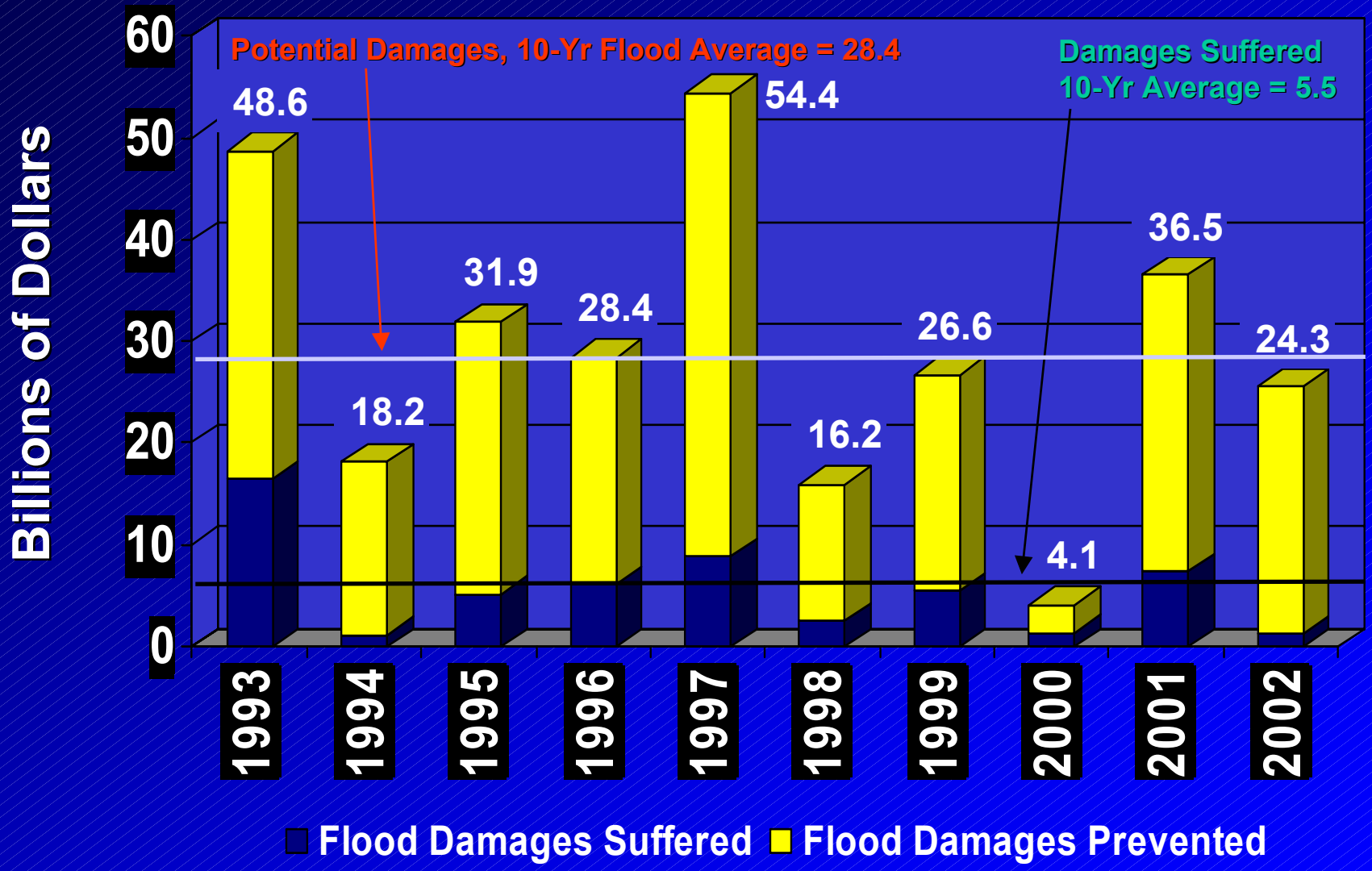


Flood Damage Reduction

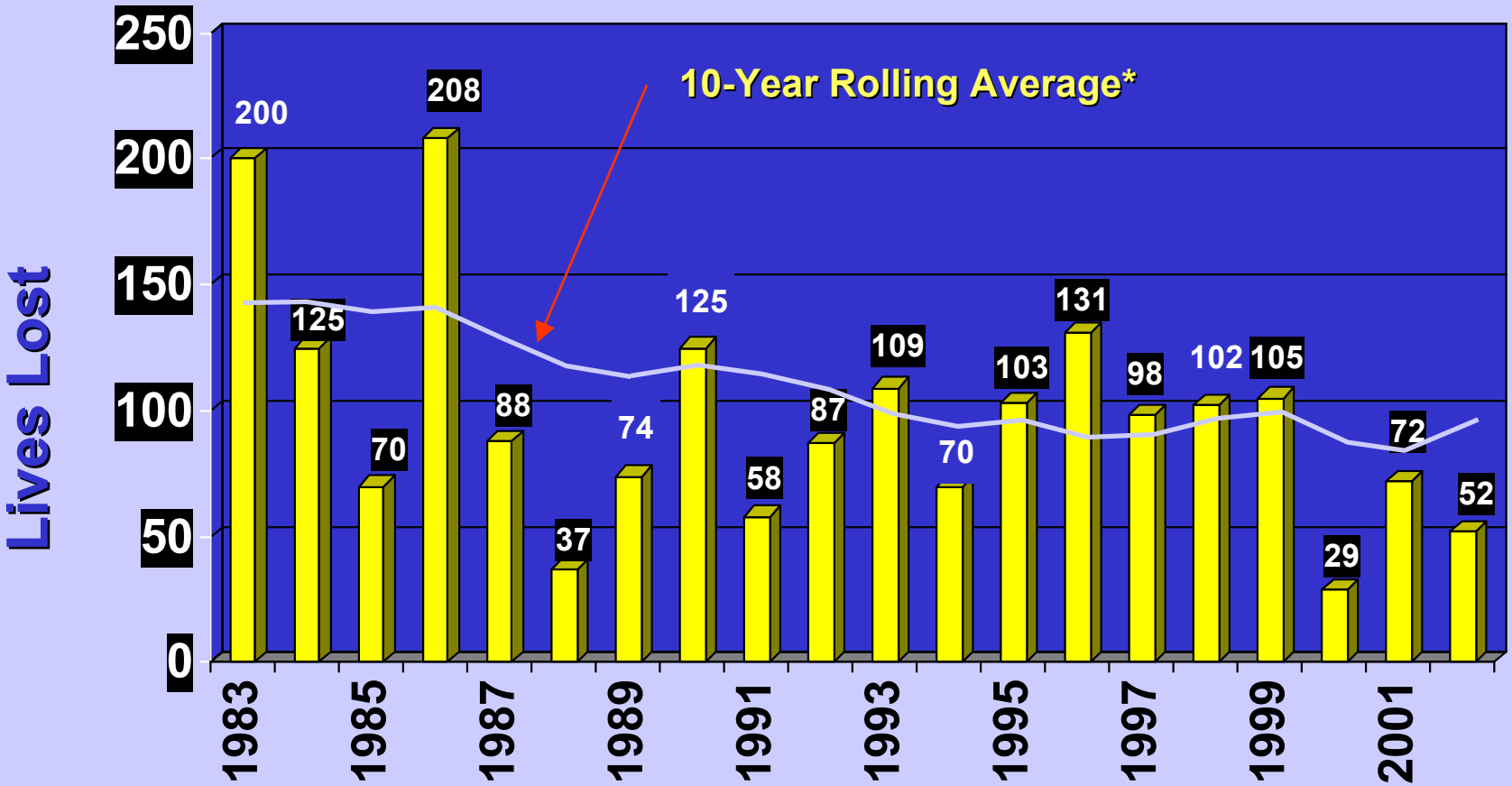


Flood Damages Prevented in the U.S.A. by the U.S. Army Corps of Engineers

Potential Flood Damages



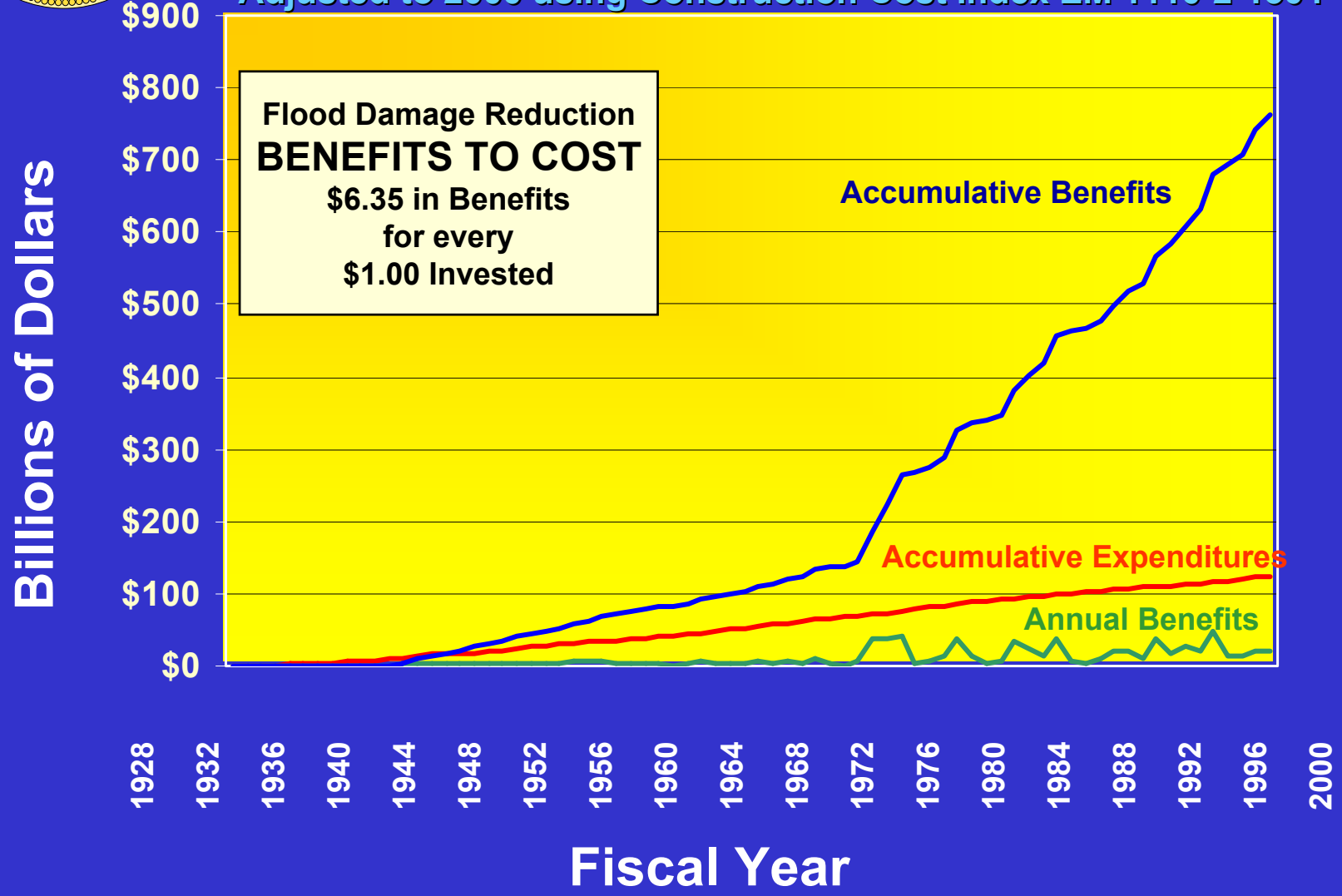
Flood Related Lives Lost



* Average for the previous 10-years.

Fiscal Year

Benefits of Federal Projects (Damages Prevented) Accumulative Corps Expenditures (Principle plus O&M)



Flood Damage Reduction
Local Protection Projects (LPP)

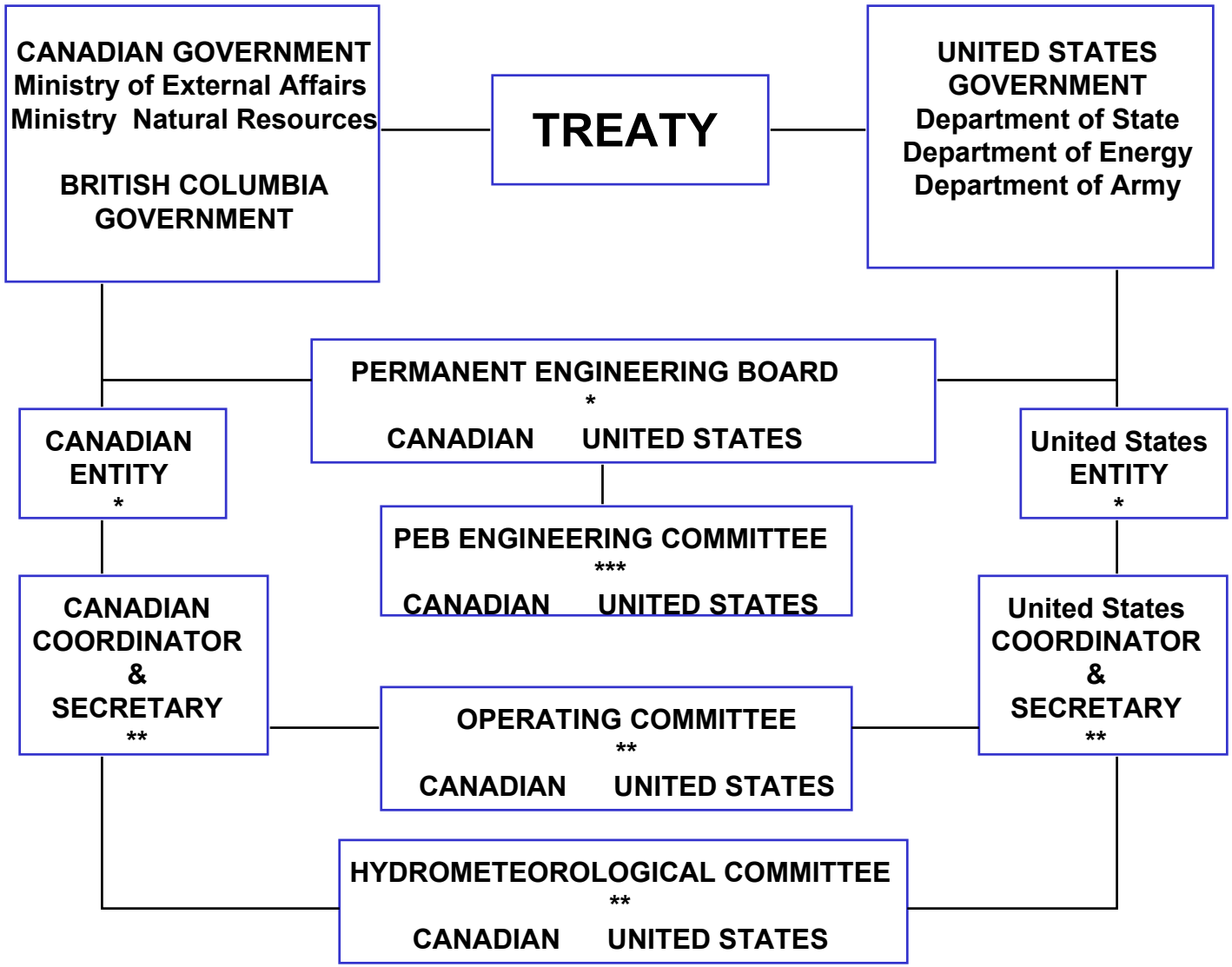
Existing Conditions without LPP

Conditions with Local Protection Project

Treaty Support

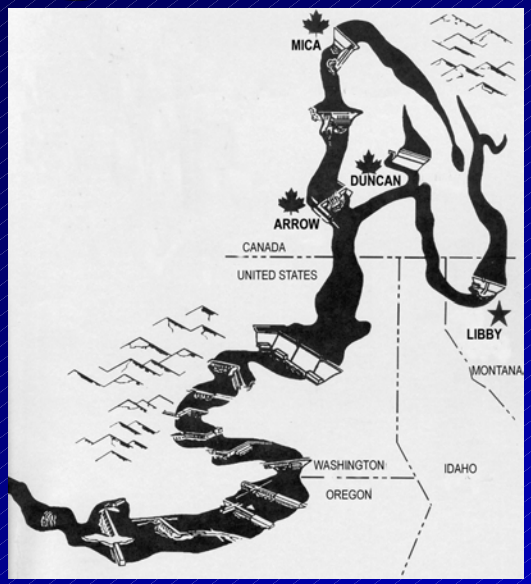
- Columbia River Treaty Organization
  - Permanent Engineering Board (PEB)
  - PEB Engineering Committee
- International Joint Commission
  - Permanent HQ Corps representative to the IJC and its Boards. Liaison between the Corps and the State Department.
- International Boundary and Water Commission

Columbia River Treaty Organization



* Established by TREATY ** Established by ENTITY *** Established by PEB

Treaty Projects



Mica

Arrow

Libby

Duncan

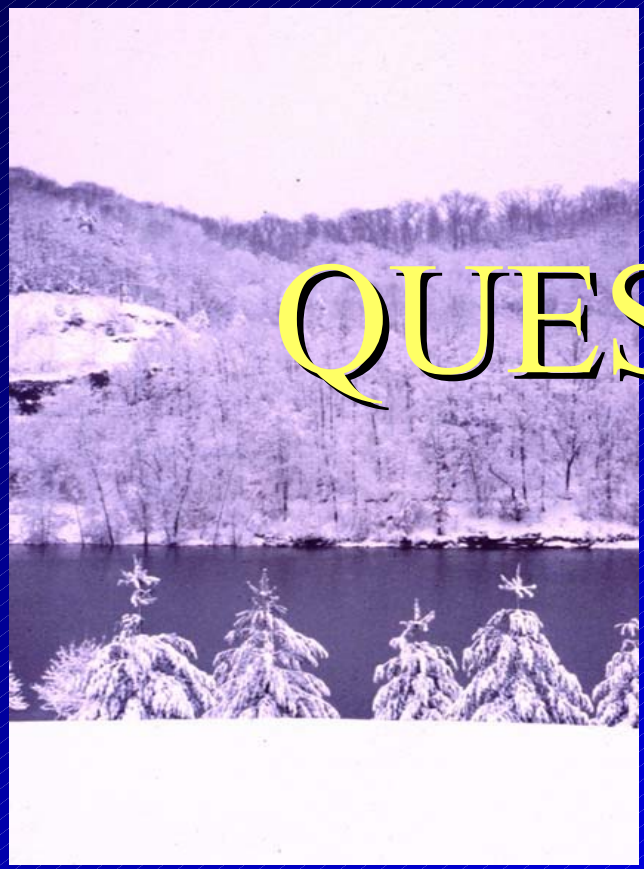
- The Treaty required Canada to construct and operate 15 1/2 Maf of storage on the Columbia River and a tributary in Canada for optimum power generation and flood control downstream in the U.S. & Canada.
- The Treaty allowed the U.S. to build the Libby project with 5 Maf storage on the Kootenai River in Montana. Lake Koocanusa backs up into Canada.

Technical Committees

- **Tidal Hydraulics**
  POC: Charles Chesnutt
- **Water Quality**
  POC: David Shepp
- **Channel Stabilization**
  POC: Jerry Webb
- **Hydrology**
  POC: Jerry Webb

Current Challenges & Issues

- Overtopping Analysis relating to catastrophic consequences vs NED Plan
- Standard Project Flood - ER Update
- Upper Mississippi River System Flow Frequency Study – Implementation Issues
- Risk & Uncertainty in Dam Safety - AEP for PMF – Is the PMF still legitimate as a design criteria???
- Water Supply Studies – Impacts to Water Management – Conflict in Policies
- Advisory Board on Science & Engineering Technology (SET) – Common Delivery Framework



QUESTIONS ???